

## REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: the closest prior art is to WO 96/06200 (hereinafter '200) and Muehlberger (US 5853815). '200 and Muehlberger both teach low pressure plasma spray systems where powder is mixed with a plasma beam to produce a plasma stream which delivers the coating material to a substrate (see paragraphs 14 and 15 of the Final Rejection of March 2, 2009). These references do not teach to control the coating conditions such as to vaporize at least 5 wt. % of the powder to form a vapor phase cloud and under conditions to form an insulating layer with an anisotropic columnar microstructure having elongate particles; where the anisotropic columnar microstructure is aligned substantially perpendicular to the metallic substrate surface and low-density transition regions with little material delimit the elongate particles relative to one another (as required by independent claim 63); but they do teach possible operating condition ranges that can be overlapped with the ranges used by applicant to achieve such features (see paragraphs 14 and 15 of the Final Rejection of March 2, 2009). However, the Examiner has reviewed the 37 CFR 1.132 declaration of K. Von Niessan filed September 1, 2009, and accepts that while conditions could be controlled to achieve such vaporization and microstructure as claimed, there would be no suggestion to optimize the variables of these particular plasma spraying systems to achieve this result (with '200 discussing plasma spraying to melt solid particles (page 3) and use of molten particles (page 7) with no mention of vaporizing; and referencing system of US 08/292,399 (page 6), which is a parent of

Muehlberger as cited; and Muehlberger describes using such a system to provide near molten particles (column 7, line 27, column 8, line 14, column 9, line 25) and to provide a uniform and dense coating (column 7, lines 25-30, column 8, lines 60-65) rather than a columnar microstructure as claimed). As well, the Examiner notes the discussion as to figures 1-3 in the present application (see pages 7-8 of the specification as filed) indicating that conditions must be specifically controlled to achieve the desired microstructure. The Examiner notes that Marszal et al (US 5792267) indicates the known use of a low pressure plasma spraying system to provide vaporized metallic coating (column 3, line 45 through column 4, line 5), but does not indicate control of the conditions to provide a thermally insulating coating using the claimed particle size, with partial melting of some of the powder, defocusing the powder beam and forming the claimed anisotropic columnar microstructure as required by independent claim 63, and does not suggest using the conditions of '200 or Muehlberger (systems that describe molten, near molten particles) to get such vaporization or microstructure.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

2. The substitute specification provided with the amendment of September 1, 2009 is approved. The Examiner notes that she accepts the change in paragraph [0006] of

"Low material transitional zones bound the particles from one another" to "Low-density transitional zones delimit the particles from one another" as not new matter based on the 37 CFR 1.132 declaration of J.G. Seka of September 1, 2009.

3. The terminal disclaimer filed on September 1, 2009 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent No. 7,482,035 has been reviewed and is accepted. The terminal disclaimer has been recorded.

As a result of this terminal disclaimer, the obviousness-type double patenting rejection of claims as being unpatentable using US Patent No. 7,482,035 is withdrawn.

4. A check with the International Bureau indicates that a priority document was not filed with the International Bureau.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Katherine A. Bareford/  
Primary Examiner, Art Unit 1792